REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 1, 10, 19, 23 and 24 are amended. Claims 1-24 are pending.

The Applicants are appreciative of the indication by the Examiner, in the Interview of March 4, 2008, that there is only support for "key input unit" as opposed to "input unit" in the specification, and that it would be helpful to the Examiner to include why specific features of the invention are beneficial over the cited art.

I. Rejection under 35 U.S.C. § 112

In the Office Action, at page 7, numbered paragraph 11, claims 1-12, 19-21 and 23 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In the Office Action, at page 8, numbered paragraph 13, claims 1-12, 19-21 and 23 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 19 and 23 were amended in accordance with the Examiner's comments, and accordingly, withdrawal of the § 112, second paragraph, rejection is respectfully requested.

II. Rejection under 35 U.S.C. § 102

In the Office Action, at page 9, numbered paragraph 15, claims 23 and 24 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,986,093 to Pastryk et al. This rejection is respectfully traversed because Pastryk does not discuss or suggest:

> a key input unit receiving an input from a user; [and]...
>
> a control unit causing a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit, based on the input received through the key input unit, that the detergent is powdered, and then causing the spraying unit to spray the detergent into the rotary tub by the spraying unit to soak a center of a laundry load,

as recited in amended independent claim 23.

In Pastryk, water enters the detergent dispenser 54 through conduit 60, which causes the detergent to be flushed through the openings between the basket 25 and the tub 24 and to flow

down into the sump area 80 in the tub. The pump 20 pumps the water and detergent solution collected in the sump 80 through conduit 72.

First, Pastryk does not discuss or suggest a key input unit that receives an input from a user, where a control unit causes a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit, based on the input received through the key input unit, that the detergent is powdered. The key input unit allows for a user to input that the detergent is powdered, thus allowing the control unit to control the pump in accordance with the input.

In addition, Pastryk does not discuss or suggest that a control unit causes a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit that the detergent is powdered, and **then** causes the spraying unit to spray the detergent into the rotary tub by the spraying unit to soak a center of a laundry load. Pastryk discusses that the dissolved detergent, which is flushed into the openings into the space between the basket 25 and the tub 24, is provided to conduits 72, 158 and 74 to be supplied into the basket 25. Pastryk does not suggest that a control unit operates the pump, thus causing the pump to dissolve the detergent contained in the tub 24. Once the water and detergent solution enter the sump area 80, only then are they pumped to conduits 72, 158 and 74. The pump 28 in Pastryk does not provide for dissolving the detergent in the water and then providing the dissolved detergent into the basket 25, but merely provides for pumping both the water and the detergent solution into the basket 25.

It is beneficial to provide a control unit that causes a pump to dissolve a detergent contained in the water tub and then causes a spraying unit to spray the detergent into the rotary tub if the detergent is powdered because powdered detergent takes a longer time to dissolve than liquid detergent. In particular, when liquid detergent is supplied into the water tub and sinks to a bottom of the water tub, the liquid detergent may sufficiently dissolve in water while the rotary tub is rotated in opposite directions. However, in the case of powdered detergent, if the powdered detergent is supplied into the water tub, it takes a relatively long time for the powdered detergent to dissolve, thus increasing a washing time in proportion to the time required for the sufficient dissolution of the powered detergent. Therefore, there is a benefit in making a determination before feeding the water into the rotary tub as to whether the detergent is powdered so that if the detergent is powdered, the powdered detergent can be dissolved, and if the detergent is not powdered, the non-powdered detergent can be fed into the rotary tub so that

the washing machine does not have to use additional energy and water in pre-dissolving the detergent.

In addition, it is difficult to sufficiently dissolve the powdered detergent only through the opposite directional rotation of the rotary tub, even with a longer washing time, and thus detergent deposits remain. Therefore, by causing the pump to dissolve the powdered detergent (distinct from the liquid detergent) contained in the water tub before the dissolved detergent is provided into the rotary tub, the present invention of claim 23, for example, allows the powdered detergent to be sufficiently dissolved. If the control unit does not make the determination that the detergent is powdered, then the pump does not have to dissolve the detergent contained the water tub before providing the dissolved detergent into the rotary tub. Thus, the present invention of claim 23 does not waste additional energy in causing the pump to operate before the detergent is provided into the rotary tub.

Thus, as Pastryk does not discuss or suggest "a key input unit receiving an input from a user; [and]...a control unit causing a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit, based on the input received through the key input unit, that the detergent is powdered, and then causing the spraying unit to spray the detergent into the rotary tub by the spraying unit to soak a center of a laundry load," as recited in amended independent claim 23, claim 23 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

In addition, Pastryk does not discuss or suggest "a key input unit receiving an input from a user;...[and] a control unit making a determination based on the input received from the key input unit as to whether a detergent is a first type of detergent or a second type of detergent and selectively causing the first type of detergent to be dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and the second type of detergent to be fed from the water tub to the rotary tub without being dissolved in the detergent feed unit," as recited in amended independent claim 24. Therefore, claim 24 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

In the Office Action, at page 10, numbered paragraph 16, claims 23 and 24 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,233,718 to Hardaway et al. This rejection is respectfully traversed because Hardaway does not discuss or suggest the features of independent claims 23 and 24.

First, Hardaway does not discuss or suggest the use of a key input unit that allows a user to provide an input.

Second, Hardaway does not suggest using a control unit to cause a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit, based on the input received through the key input unit, that the detergent is powdered, and then causing the spraying unit to spray the detergent into the rotary tub by the spraying unit to soak a center of a laundry load.

Hardaway discusses a pump 38 causing a detergent solution to be sprayed through a nozzle 51 into a spin basket 35. Hardaway does not suggest that a control unit operates the pump 38, thus causing the pump 38 to dissolve the detergent contained in the water tub 34. Only after the water and already-dissolved detergent (which has been introduced into the spin basket 35 with water and then the water and dissolved detergent feed into the water tub 34) exit the water tub 34 and enter the conduit 82 through the pump 38, only then are they pumped through conduit 84 and through nozzle 51 into the spin basket 35. The pump 38 in Hardaway does not provide for dissolving the detergent, as the detergent has already been dissolved by the function of the washing machine.

In contrast, in the present invention of claim 23, for example, the pump causes the detergent contained in the water tub to be dissolved. This is done by a process of repeatedly turning on and off the pump to periodically reciprocate the powdered detergent contained in the water tub. Thus, the solubility of the powdered detergent in the water is increased in a short time by an action of shaking and mixing the detergent. Then, after the powdered detergent is dissolved in the water, the pump is turned on to feed the dissolved detergent into the rotary tub through the detergent feed pipe and spray nozzle.

Therefore, while Hardaway discloses a pump 38, Hardaway does not suggest that the pump 38 causes the powdered detergent to specifically be dissolved before the pump is operated to feed the dissolved detergent/water solution into the spin basket 35. The pump 38 in Hardaway does not provide for dissolving the detergent and then providing the dissolved detergent into the basket 35.

Again, it is beneficial to provide a control unit that causes a pump to dissolve a detergent contained in the water tub and then causes a spraying unit to spray the detergent into the rotary tub if the detergent is powdered because powdered detergent takes a longer time to dissolve than liquid detergent. Thus, if the detergent is first identified as being powdered and then, based on such a determination, is caused to dissolve before being caused to be fed into the rotary tub,

the powdered detergent will be sufficiently dissolved without requiring an increase in washing time. Further, if the detergent is not identified as being powdered, then the washing machine does not have to cause the detergent to be preliminarily dissolved, thus not requiring excess use of water and energy.

Thus, as Hardaway does not discuss or suggest "a key input unit receiving an input from a user; [and]...a control unit causing a pump to dissolve a detergent contained in the water tub in response to a determination by the control unit, based on the input received through the key input unit, that the detergent is powdered, and then causing the spraying unit to spray the detergent into the rotary tub by the spraying unit to soak a center of a laundry load," as recited in amended independent claim 23, claim 23 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

In addition, Hardaway does not discuss or suggest "a key input unit receiving an input from a user;...[and] a control unit making a determination based on the input received from the key input unit as to whether a detergent is a first type of detergent or a second type of detergent and selectively causing the first type of detergent to be dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and the second type of detergent to be fed from the water tub to the rotary tub without being dissolved in the detergent feed unit," as recited in amended independent claim 24. Therefore, claim 24 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

III. Rejection under 35 U.S.C. § 103

In the Office Action, at pages 11-14, numbered paragraphs 18-21, claims 1-12 and 19-21 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over various combinations of Pastryk, Hardaway, U.S. Patent No. 5,438,507 to Kim et al. or U.S. Patent No. 5,140,842 to Kiuchi et al., U.S. Publication No. 2003/0208855 to McAllister et al., and U.S. Patent No. 5,870,906 to Denisar. These rejections are respectfully traversed.

For example, the combination of the teachings of Pastryk, Hardaway, Kim and Kiuchi does not suggest:

> a key input unit receiving an input from a user;
>
> a control unit determining whether a detergent used is a powdered detergent or a liquid detergent based on the input from the user; and

> a detergent feed unit to feed the detergent contained in the water tub into the rotary tub through the detergent feed pipe, the control unit controlling the detergent feed unit to dissolve the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent,

as recited in independent claim 1.

As discussed above, Pastryk and Hardaway do not suggest all the features of independent claim 1. Further, there is a benefit in determining whether a detergent used is powdered or liquid and causing the powdered detergent to be dissolved before feeding the detergent into the rotary tub in that the determination either results in less overall washing time by causing the powdered detergent to be completely dissolved before being used in a washing cycle or results in saving of energy and water in not requiring the liquid detergent to be completely dissolved before being used in a washing cycle.

Further, even combining the teachings of Kim or Kiuchi, for example, does not make up for the deficiencies in Pastryk and Hardaway. Specifically, while Kim and Kiuchi may make a determination as to whether the detergent is liquid or powdered, and Kiuchi may control the washing or rinsing operation in accordance with the judged type, neither Kim nor Kiuchi, alone or in combination with Pastryk or Hardaway, suggest controlling a detergent feed unit to dissolve the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent. Again, it is beneficial to make such a distinction so that powdered detergent can be dissolved by an operation before being fed into the rotary tub for use in a washing operation and so that liquid detergent does not have to be dissolved by an operation before being fed into the rotary tub for use in a washing operation. Neither Kim, Kiuchi nor the cited motivation of selecting desired detergent type based on load type suggest why a determination is made as to whether a detergent is liquid or powdered and then, based on this determination, a detergent feed unit dissolves the detergent before feeding the detergent into the rotary tub, but only if the detergent is powdered (otherwise, the liquid detergent is not pre-dissolved before being fed into the rotary tub, but is fed with water into the rotary tub without utilizing a dissolution operation).

In addition, McAllister and Denisar fail to make up for the deficiencies in Pastryk and Hardaway.

Therefore, as the combination of the teachings of the references does not suggest "a key input unit receiving an input from a user; a control unit determining whether a detergent used is a powdered detergent or a liquid detergent based on the input from the user; and a detergent feed

unit to feed the detergent contained in the water tub into the rotary tub through the detergent feed pipe, the control unit controlling the detergent feed unit to dissolve the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in independent claim 1, claim 1 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In addition, the combination of the teachings of Pastryk or Hardaway and Kim or Kiuchi does not suggest "a key input unit receiving an input from a user;...a control unit determining whether a detergent used is a powdered detergent or a liquid detergent based on the input received through the key input unit; and a detergent feed unit to feed the detergent contained in the water tub into the rotary tub, the control unit causing the detergent feed unit to dissolve the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in independent claim 19. Therefore, claim 19 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 2-12, 20 and 21 depend either directly or indirectly from independent claims 1 and 19 and include all of the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 3 recites, "a spray nozzle provided at the second end of the detergent feed pipe to spray the detergent into the rotary tub." Therefore, claims 2-12, 20 and 21 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, claims 1, 10, 19, 23 and 24 have been amended. Claims 1-24 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

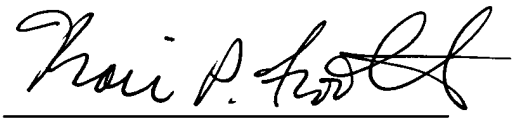
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: May 1, 2008

By: 

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